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Mine Accidents and Their Prevention

Published by
Delaware, Lackawanna and Western Railroad Co.
Coal Mining Department.

YD 04076

GIFT OF
Delaware, Lakawanna
& Western R. R. Co.

ENGLISH

The purpose of this book is to teach mine workers how to prevent accidents and at the same time to teach the English language to those who cannot speak English. The lessons are arranged so that the left hand page shows how the accident happens and the page opposite shows how to prevent the accident. Red lines indicate things which never should be done.

POLISH

Celem niniejszej książki jest uczyć robotników majnerskich, jak się ustrzedz wypadków i jednocześnie uczyć się po angielsku, którzy jeszcze angielskiego języka nie znają. Lekcye są podzielone tak, że po lewej stronie snajduje się objaśnienie jak wypadek zachodzi, po prawej zaś stronie znajduje się objaśnienie jak, temuż zapobiedz. Czerwone linije naznaczają rzeczy, które nigdy nie powinne być robione.

LITHUANIAN

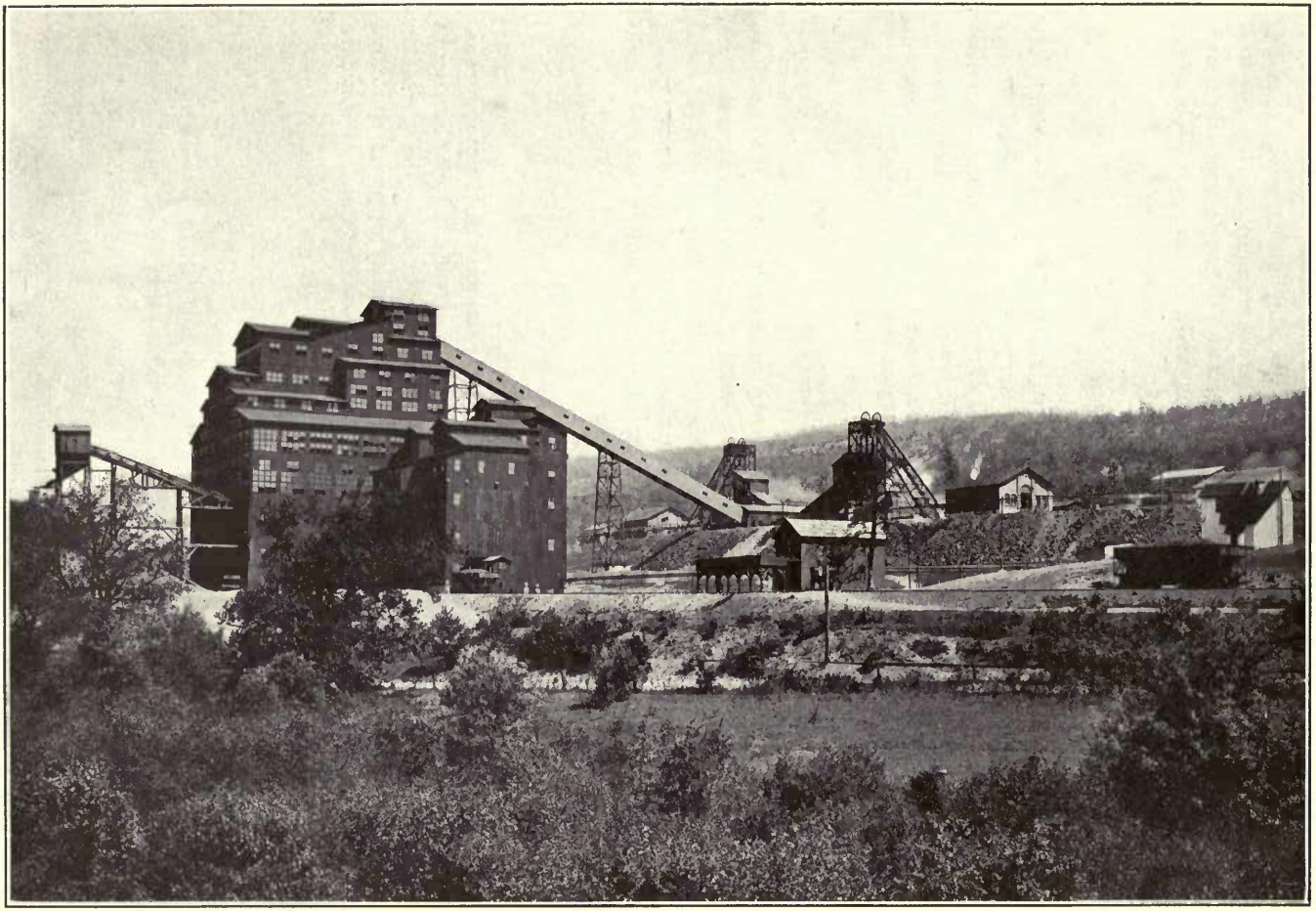
Tikslu šios kningos yra mokinti majninius darbininkus, kaip apsisaugot nuo atsitikimo ir tuom pat laiku mokintis angliškos kalbos, kurie da jos nepažįsta. Lekcijos yra padalintos taip, kad iš kiauros pusės randasi paaiškinimai kaip atsitikimas įvyksta, o iš dešinės pusės paaiškinimai kaip nelaimės apsisaugoti. Raudonos linijos pabrieže dalikus, kurių niekada nevalia daryti.

ITALIAN

Lo scopo di questo libro e' di insegnare ai minatori come prevenire accidenti, ed in pari tempo, di insegnare l'inglese a coloro che ancora non lo sanno. Le lezioni sono disposte in guisa che la pagina a sinistra dimostra come avvengono gli accidenti e la pagina opposta dimostra come prevenire gli accidenti stessi. Le righe rosse stanno ad indicare quelle cose che non dovrebbero mai esser fatte.

RUSSIAN

Цїль сеї книжки є — научити робітників в майнах як запобігти нещасним випадкам а також научити анґлїйскої мови тих, котрі єї не знають. Лекції є упорядковані так, що лїва сторона показує, як нещасний випадок трафляє ся, а противлежна сторона показує, як тому випадкові запобігти. Червоні рядки показують річи, яких нїколи не повинно ся робити.



Truesdale Breaker, D. L. & W. Co., Hanover Township, Luzerne County, Pa.

Mine Accidents and their Prevention

Illustrated by 200 Pictures Taken in the Mines by W. B. Bunnell
Official Photographer of the D. L. & W. R. R. Company

For the Instruction of

MINE-WORKERS

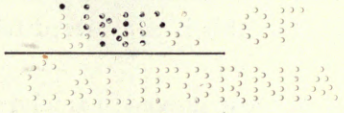
Especially Adapted for the Teaching of English to the
Non-English Speaking People

Prepared by

J. H. DAGUE and S. J. PHILLIPS

Secretaries for the Education of Mine Workers, Young Men's Christian Association
of Scranton, Pennsylvania

Under the Direction of R. A. PHILLIPS, Superintendent, and C. E. TOBEY, Assistant
Superintendent, Coal Mining Department, Delaware, Lackawanna and
Western Railroad Company, Scranton, Penna.



Published by the

DELAWARE, LACKAWANNA & WESTERN RAILROAD CO.

Coal Mining Department

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PREFACE

The purpose of this book is two-fold: First, to make all Mine-Workers more familiar with safe methods of mining hard coal, in order that many of the more common accidents attendant upon this hazardous occupation may be avoided and the lives of the workmen may be preserved to the industry and to those dependent upon them.

Second, to give a knowledge of colloquial English to the non-English speaking Mine-Workers in order that they may understand their orders intelligently and thus be better able to help themselves and protect their lives against the dangers of the mine.

The plan has been to incorporate in a permanent form more than two hundred pictures which have been taken in the mines and have been used with telling effect in stereopticon lectures before immense gatherings of mining men.

The pictures have been arranged in series. Each series shows an accident. The first part of the series shows how the accident happens and the last part shows how the accident might be avoided.

The main principle of the lessons has been to tell the story of the pictures in a series of short, pointed sentences arranged in logical sequence so that the general flow of thought will not be broken. The plan of the Roberts' Lessons of English for Coming Americans published by the International Committee of Young Men's Christian Association, which has been used so successfully for a long time in teaching English to foreigners has been closely followed and in accordance with this scheme the verb has been given great prominence as this is considered the most difficult element of the language.

The basic idea of these lessons, namely, the making of series of photographs to show the successive stages in the occurrence and prevention of an accident originated with R. A. Phillips, Superintendent Coal Mining Department, Delaware, Lackawanna and Western Railroad Company, and it is due to his persistent effort that it has been possible to carry to completion the present work.

This selection of pictures was not made at random but is based on the Annual Reports of the Department of Mines of Pennsylvania. These Reports have been carefully studied and only those accidents which have been of most frequent occurrence and the most fruitful in loss of life or limb have been chosen for this work.

These pictures have been procured with a great expenditure of money and of painstaking effort, and much time and energy have been devoted to the preparation of the lessons. Every lesson has been carefully thought through and has been arranged with the view of making the special point to the pictures stand unmistakably in the foreground so that there may be no mistaking the particular point of mine law which covers the accident in question.

There has been appended to the mining lessons a number of lessons on American Citizenship especially prepared for this book by W. J. Torrey, Esq., who has been closely connected with the Young Men's Christian Association work for Immigrants in Scranton, Pa.

It is earnestly desired that all into whose hands this book may come will do their part in helping it to accomplish the good for which it is intended.

J. H. D.

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NOTE TO TEACHERS

It is not expected that these lessons will give the men a complete mastery of English, but they are intended to give the Non-English speaking miner a good understanding and use of the language used in the mines. To get best results the teacher will observe that in every lesson three distinct steps must be followed. (1st) Conversation based on the pictures; (2nd) Reading the lesson; (3rd) Writing the lesson.

The picture is the soul of the lesson and contains all the material treated in the lesson. Before any attempt whatever is made at reading the lesson, it should be thoroughly mastered in conversation, according to the principles used in teaching the Roberts' System.

The facts shown in the picture should be brought to the attention of the pupil by such questions as—

What do you see in this picture?
What is the miner doing?
With what is the miner drilling the hole, etc.?

In every case require that the pupil give a full and complete sentence in reply and not merely a single word.
Lead him to say—

I see a miner in this picture.
The miner is drilling a hole.
He is drilling a hole with a drill, etc.

The teacher should also make extensive use of the questions at the end of each lesson, for in this way, he can best determine how fully the content of the lesson has been grasped by the pupil. After the lesson has been completely mastered in conversation the reading of the lesson should begin. But little difficulty will be experienced in reading after the conversation has been mastered. Then after the pupil learns to read the lesson he is ready to begin the writing of the lesson. Much of the written work can be practiced at home by the pupil.

If the above course of procedure is carefully and faithfully followed, the pupil will soon learn enough idiomatic English to help him greatly in his work and be of every day practical use.

ALPHABET

a b c d e f g

a b c d e f g

A B C D E F G

A B C D E F G

h i j k l m n

h i j k l m n

H I J K L M N

H I J K L M N

o p q r s t u

o p q r s t u

O P Q R S T U

O P Q R S T U

v w x y z

v w x y z

V W X Y Z

V W X Y Z

Miner Drilling Hole

Lighting the Squib

Examining Results of Shot

Fall of Roof on Miner

FAILURE TO EXAMINE ROOF AFTER A SHOT

		The miner is in the chamber.
is drilling	:	He is drilling a hole in the face.
cleans out	:	He cleans out the hole with a scraper.
puts	:	He puts the powder into the hole.
lights	:	He lights the squib.
goes back	:	He goes back to the cross-cut.
comes back	:	The miner comes back to the face.
try	:	He does not try the rock with his bar.
examine	:	He goes in to examine the face.
falls	:	The rock is bad and falls on him.
is broken	:	The miner's back is broken.

What is the miner doing? What does he put into the hole? What does the miner do after he lights the squib? Did the miner try the roof? What happened when the miner went under the bad roof?

DON'T FAIL TO EXAMINE THE ROCK AFTER EVERY SHOT.

Miner Testing Roof

Miner and Laborer Pull Down Roof

Miner Examines Face in Safety

EXAMINING ROOF AFTER FIRING A SHOT

has gone off	:	The shot has gone off.
comes back	:	The miner comes back to the face.
tries	:	He tries the rock with his bar.
is bad	:	The rock is bad.
calls	:	The miner calls the laborer.
pull down	:	The miner and laborer pull down the bad rock.
is safe	:	Now the chamber is safe.
takes out	:	The miner takes out the coal without harm.
examine	:	The miner must always examine the rock after a shot.

What is the miner doing with his bar? Is the rock bad? What are the miner and laborer doing? Is the chamber safe now? Can the miner take out the coal without harm? What must the miner do after every shot?

ALWAYS EXAMINE THE ROCK AFTER A SHOT.

Miner Knocks Out Prop With Hammer

Rock Falls on Miner

KNOCKING OUT A PROP WITH A HAMMER

stands	:	The prop stands in the chamber.
made of	:	The prop is made of wood.
holds up	:	The prop holds up the rock.
knock out	:	The miner will knock out the prop.
raises	:	The miner raises the hammer.
strikes	:	He strikes the prop with the hammer.
knocked out	:	The prop is knocked out.
falls down	:	The prop falls down.
falls on	:	The rock falls on the man.
killed	:	The man is killed.

Of what is the prop made? What does the miner want to do? Is there loose rock over the prop? With what does the miner strike the prop? When the prop falls what happens? Is the miner killed? Is it safe to knock out a prop with a hammer? Why is it not safe?

NEVER KNOCK OUT THE PROP WITH THE HAMMER.

Building Collar Beside Prop

Preparing to Blow Out Prop With Dynamite

Prop After Shot Went Off

STANDING A COLLAR BESIDE PROP OR KNOCKING OUT PROP WITH DYNAMITE

will lay	:	The miner will lay more road.
is in	:	This prop is in the way.
must knock out	:	The miner must knock out the prop.
is not	:	The roof is not safe.
put up	:	He must first put up a collar.
drives	:	He drives in wedges to tighten the collar.
knocks out	:	Now the miner knocks out the prop with the hammer.
holds up	:	The collar now holds the roof up.
is safe	:	The miner is safe.
ties	:	The miner ties a stick of dynamite to the prop.
fixes	:	He fixes a cap and fuse in the dynamite.
lights	:	The miner lights the fuse.
goes back	:	He goes back to a cross-cut.
burns	:	The fuse burns slowly.
explodes	:	The cap explodes, and puts off the dynamite.
knocks out	:	The exploding dynamite knocks out the prop.

KNOCK OUT PROPS WITH DYNAMITE.

Two Props Standing and Miner Lighting Squib

Props Are Knocked Out by Shot

Miner Hurt by Fall of Rock

PROPS KNOCKED OUT BY A SHOT

see	:	We see two props in this chamber.
hold up	:	The props hold up the top.
tamped	:	The hole has been tamped.
lights	:	The miner lights the squib.
shouts	:	The miner shouts, "Fire! Fire!"
runs back	:	He runs back to the cross-cut.
goes off	:	The shot goes off.
returns	:	The miner returns to the face.
blown out	:	He finds the props are blown out.
examine	:	He does not examine the top.
goes into	:	He goes into the face.
falls	:	The top falls on him.
injured	:	He is injured.

What is the miner in the picture doing? Where does he go? What happens to the props? Did he examine the top? Is this a careful miner?

DON'T FAIL TO EXAMINE THE TOP AFTER EVERY SHOT.

Miner Examines Roof After Shot

Miner and Laborer Replacing Props

REPLACING PROPS AFTER A SHOT

has returned	:	The miner has returned to the face.
are down	:	He finds the props are down.
examines	:	He examines the roof with his drill.
finds	:	He finds the top is bad.
must make	:	The miner must make the top safe.
calls	:	He calls his laborer.
put back	:	The miner and laborer put the props back in place.
is safe	:	The chamber is now safe.
can load	:	Now the laborer can load his coal.
		This is a careful miner.

What is the miner doing in this picture? What does he do with the bad top? Is it safe to work under bad top? Should the laborer begin to load coal before he knows the top is safe?

ALWAYS EXAMINE THE TOP AFTER A SHOT.

Bad Roof Under Which a Car of Clean Coal Is Lying

Laborer Loading the Coal

Laborer Covered by Fall of Roof

WORKING UNDER BAD ROCK

	Here is a car of clean coal.
is trying :	The miner is trying the rock above the coal.
	The rock is not good.
does not want:	The miner does not want to dirty the coal.
does not pull :	He does not pull down the bad rock nor set a prop.
is not safe :	The chamber is not safe.
is not careful :	The miner is not careful.
comes :	The car comes into the chamber.
begins to load:	The laborer begins to load the clean coal.
falls :	The bad rock falls on him.
is hurt :	The laborer is badly hurt.

Is there clean coal beside the road? What is the miner doing? Is the rock above the coal good? Why does the miner not pull down the bad rock? Is this a careful miner? Is this chamber safe? What is the laborer doing? What happens to the laborer?

DON'T FAIL TO MAKE THE ROOF SAFE.

Standing Prop Under Bad Roof

Barring Down Bad Roof

Men Clearing Away Fallen Roof

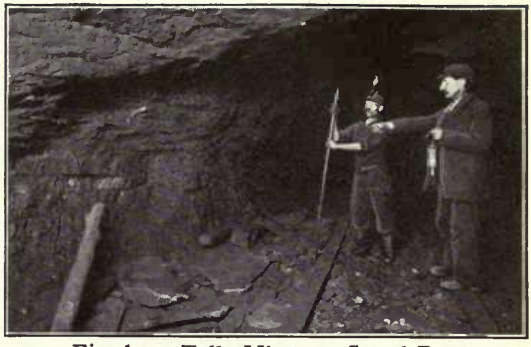
MAKING ROOF SAFE

is above	:	Bad rock is above this clean coal.
must make	:	The miner must make this place safe.
can make	:	He can make the place safe in two ways.
can stand	:	First, he can stand a prop under the bad rock.
stands	:	If he stands a prop the rock will not dirty the coal.
can bar down	:	Second, the miner can bar down the bad rock.
will dirty	:	This will dirty the coal.
helps	:	The miner helps the laborer put the big pieces in the gob.
is safe	:	The place is now safe.
can clean	:	Now the laborer can clean and load the coal.

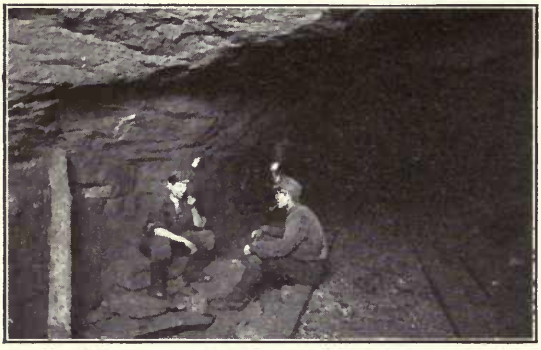
Is it safe for the laborer to load this coal? Why? Are there two ways to make the place safe? What is the first way to make the place safe? If the miner sets a prop will the coal be dirtied? What is the safest way to make the place safe? Can the laborer clean and load the coal in safety now? Is this a careful miner?

ALWAYS MAKE SURE THE ROOF IS SAFE.

Fire-boss and Miner Testing Roof



Fire-boss Tells Miner to Stand Prop Under Roof



Miner and Laborer Smoke Before Obeying Order

Miner and Laborer Under Fall of Roof

MINER NEGLECTING ORDERS

are	:	Here are the fire-boss and the miner.
hangs over	:	This rock hangs over the road.
are testing	:	The miner and the fire-boss are testing it.
is safe	:	The rock is not safe.
orders	:	The fire-boss orders the miner to put that prop under the rock.
goes away	:	The fire-boss goes away.
sit down	:	The miner and the laborer sit down to smoke before they stand the prop.
falls	:	The loose rock falls on them.

What does the fire-boss tell the miner to do? Does the miner obey the fire-boss at once? What are the miner and laborer doing? What happened to them while they smoked? Should the fire-boss wait till the prop is placed?

MINER, DON'T DELAY MAKING YOUR PLACE SAFE.

Fire-boss Waits to See Orders Carried Out

FIRE-BOSS SEES THAT ORDERS ARE OBEYED

tests : The miner tests the rock and finds it is not safe.

tells : The fire-boss tells the miner to stand a prop under the bad rock.

does : The fire-boss does not go away.

waits : He waits until the prop is stood.

knows : Now the fire-boss knows the men are not in danger.

must be : The fire-boss must be sure every place is safe.

helps : Every careful miner and laborer helps to prevent accidents.

What are the miner and laborer doing? Why does the fire-boss not go away? Who must be sure that every place is safe? Who can help to prevent accidents?

FIRE-BOSS, SEE THAT YOUR ORDERS ARE OBEYED PROMPTLY.

Miner Drilling Hole Before Shooting Down Rock Over Clean Coal

Laborer Telling Miner Not to Dirty Coal

Miner Ready to Go Home Warns Laborer to Be Careful

Laborer Covered by Fall of Rock

MINER LEAVING CHAMBER IN UNSAFE CONDITION

has cleaned	:	The laborer has cleaned this coal.
is dangerous	:	The rock above this clean coal is dangerous.
wishes	:	The miner wishes to blow down the rock.
are drilling	:	The miner and laborer are drilling a hole in the rock.
brings	:	The miner brings a stick of dynamite.
wants	:	The miner wants to blast the rock at once.
does want	:	The laborer does not want the miner to fire the shot now.
says	:	The laborer says, "The rock will dirty this coal."
does wish	:	The miner does not wish to dirty the coal.
tells	:	The miner tells the laborer to be careful and then he goes home.
begins	:	The laborer begins to load the coal.
falls	:	This rock falls on him.
is killed	:	The laborer is killed.

What does the miner want to do? Why does the laborer not want the rock blown down? What does the miner say just as he starts home? Does the laborer load coal under the dangerous rock? What happens to the laborer? Should the miner have blasted the rock before he went home? Who is to blame when the chamber is not safe?

MINER, DON'T GO OUT UNTIL THE ROOF IS MADE SAFE.

Miner Drilling Hole Before Shooting Down Rock Over Clean Coal

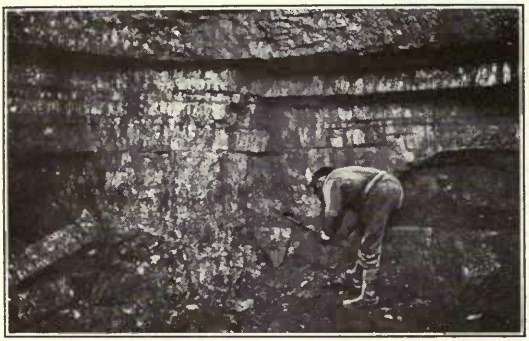
Miner and Laborer Taking Rock Off of Clean Coal

MINER MAKES CHAMBER SAFE BEFORE GOING HOME

is dangerous	:	The rock above this clean coal is dangerous.
will blow down	:	The miner will blow down this bad rock.
are drilling	:	The miner and laborer are drilling a hole in the rock.
gets	:	The miner gets a stick of dynamite.
puts	:	He puts the dynamite in the hole and tamps it.
lights	:	He then lights the fuse and runs back to the cross-cut.
goes off	:	The dynamite goes off.
is blasted	:	The bad rock is blasted down.
falls	:	The rock falls on top of the clean coal.
safe	:	The chamber is now safe.
is hanging	:	Now there is no bad rock hanging above the coal.
helps	:	The miner helps the laborer to remove the large pieces of rock.
goes	:	The miner goes home knowing the laborer is safe.
cleans	:	The laborer now cleans the coal again.
can load	:	Now the laborer can load the coal in safety.

Is the rock above the clean coal dangerous? What are the miner and laborer doing? What will the miner do with the dynamite? What does the miner do after he lights the fuse? Does the dynamite blow down the bad rock? Where does the rock fall? Does the miner help remove the large pieces of rock? Is the laborer safe when the miner goes home?

MINER, MAKE THE CHAMBER SAFE BEFORE YOU GO HOME.



Taking Needle Out of Hole

Laborer Comes Back to Face Before Miner

Laborer Under Fall

LABORER COMES BACK FIRST AFTER SHOT

has tamped:	The miner has tamped the hole.
is taking :	He is taking the needle out of the hole.
goes back :	The laborer goes back and shouts, "Fire! Fire!"
lights :	The miner lights the squib.
shouts :	The miner runs back and shouts, "Fire! Fire!"
has gone off:	The shot has gone off.
returns :	The laborer returns first to the face.
has been :	The rock has been loosened by the shot.
did examine:	The laborer did not examine the roof.
went under:	He went under the bad rock to work.
came down:	The rock came down and caught the laborer.

What has the miner done? What is he doing now? What will he do after he lights the squib? After the shot goes off who returns first to the face? Should the miner or laborer go to the face first? Was the place safe for the laborer?

DON'T FAIL TO EXAMINE THE ROOF AFTER EVERY SHOT.

Miner Examines Face Before Laborer Enters

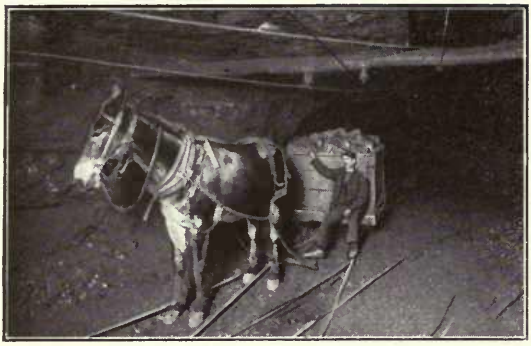
Barring Down Bad Roof

THE MINER MAKES THE CHAMBER SAFE

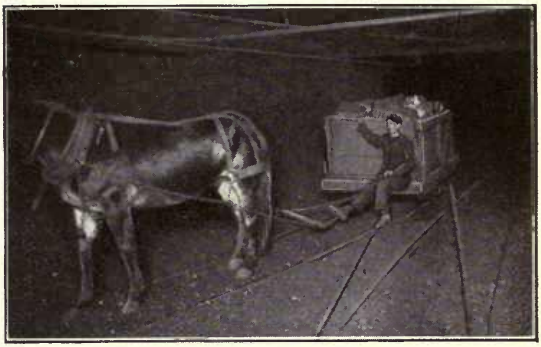
has gone off	:	The shot has gone off.
returns	:	The miner returns first to the face.
tries	:	The miner tries the roof.
finds	:	He finds the rock has been loosened.
pull down	:	The miner and laborer pull down the loose rock.
pull down	:	They pull down the rock with their bars.
is safe	:	The chamber is now safe.
loads	:	The laborer now loads out the coal.
must	:	The miner must always see that the chamber is safe for the laborer.

Who goes back first after the shot? What does the miner do? Did the miner find loose rock? With what do the miner and laborer pull down the rock? Who must see that the chamber is safe?

EXAMINE THE ROOF AFTER EVERY SHOT.



Driver Sliding Foot on Rail



Foot Entering Frog

Driver's Foot Under Car

DRIVER SLIDING FOOT ON RAIL

is coming	:	The driver is coming with a car of coal.
is sitting	:	The driver is sitting on the bumper.
is sliding	:	He is sliding his foot on the rail.
comes	:	The car comes to a branch.
is	:	There is a frog at every branch.
is caught	:	The driver's foot is caught in the frog.
shouts	:	The driver shouts, "Whoa!" at the mule.
does stop	:	The mule does not stop.
is held	:	The driver's foot is held fast.
is pulled	:	He is pulled from the bumper to the ground.
runs over	:	The car runs over his leg.
is broken	:	The driver's leg is broken.
not safe	:	It is not safe for the driver to slide his foot on the rail.

How is the driver riding on the car? Is he sliding his foot on the rail? What happens when he comes to the frog? Does the mule stop? Does the car run over his leg? Is his leg broken? Is it safe for the driver to slide his foot on the rail?

DON'T SLIDE YOUR FOOT ON THE RAIL.

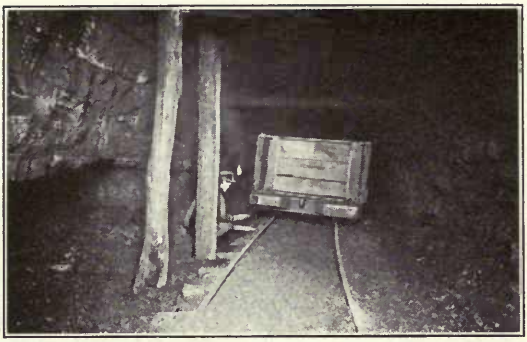
Driver In Standing Position on Bumper

DRIVER RIDING IN PROPER POSITION

is coming	:	The driver is coming with a car of coal.
is pulling	:	The mule is pulling the car.
is far	:	The car is not far from the branch.
is standing	:	The driver is standing on the bumper.
passes	:	The car passes over the frog.
is safe	:	The driver is safe.
is broken	:	His leg is not broken.
should stand	:	The driver should stand on the bumper when the car is moving.

Is the driver coming with a car of coal? Is the car near the branch? What is there at every branch? How is the driver riding on this car? Does he pass the frog if he stands on the bumper?. How should the driver ride on the car?

DRIVER, ALWAYS STAND ON BUMPER OF A MOVING CAR.



Runner Runs Car Into Face; Props Too Close to Road

Runner Between Prop and Car

PROPS STANDING TOO NEAR THE ROAD

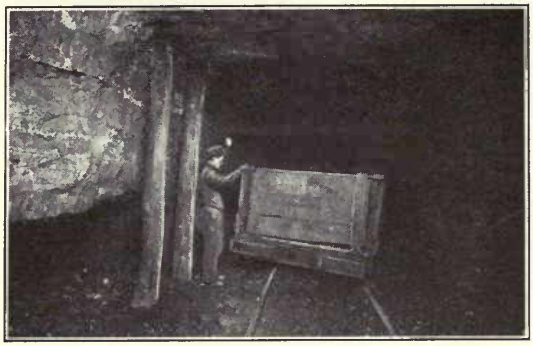
is going	:	This car is going into the face.
must sprag	:	The runner must sprag the car.
stood	:	The miner stood the props too near the road.
is not	:	There is not enough room between the track and the props.
must run	:	The runner must run between the car and the props.
to pass	:	There is not enough room for the car to pass the runner.
is caught	:	The runner is caught between the car and the prop.
is crushed	:	The runner is crushed to death.

What is the runner doing? Must the runner run between the car and the props? Is there enough room between the track and the props? Who stood the props too near the track? What happened when the car was passing the props? Is the runner killed? Should the props be farther from the track?

MINER, DON'T STAND PROPS LESS THAN THREE FEET FROM THE ROAD.

Miner Standing Prop With Gauge

Runner Runs Car Into Face



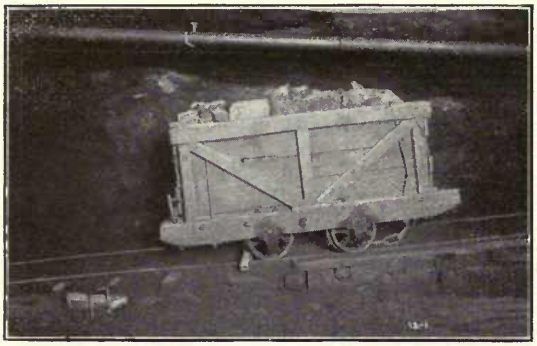
Runner Between Derailed Car and Props

PROPS STANDING THREE FEET FROM THE RAIL

is coming	:	A car is coming into the face.
runs ahead	:	The runner runs ahead to sprag the car.
is plenty	:	There is plenty of room between the track and the props.
stood	:	The miner stood these props three feet from the track.
passes	:	The car passes the runner.
sprags	:	The runner sprags the car.
is safe	:	There is plenty of room and the runner is safe.
has	:	The miner has a three-foot gauge.
measures	:	He measures between the track and the prop with the gauge.

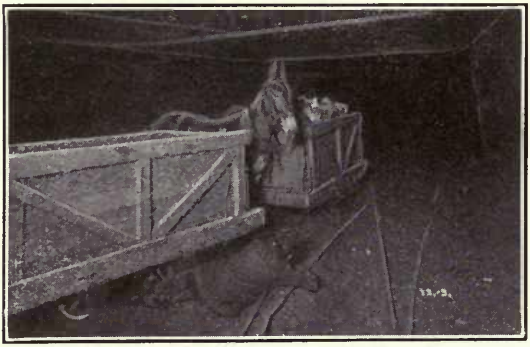
What is the runner doing? Has he plenty of room here? Does the car pass the runner? Is the runner safe? How far are these props from the track? How does the miner know the props are three feet from the track? How long is the gauge?

ALWAYS STAND YOUR PROPS THREE FEET FROM THE RAIL.



Car on Pitch Improperly Blocked

Driver and Mule Coming Up Gangway Road



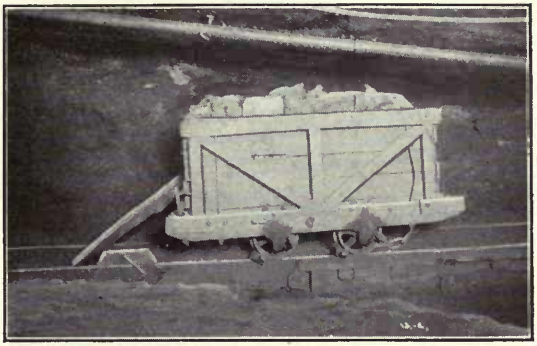
Driver and Mule Caught By Car

CAR IMPROPERLY BLOCKED ON PITCH

is on	:	This chamber is on the pitch.
is in	:	The car is in the face.
has loaded	:	The laborer has loaded the car.
is steep	:	The road is very steep.
is blocked	:	The car is not blocked in the right way.
is	:	There is only a very small block under the wheel.
came out	:	This block came out.
runs down	:	The loaded car runs down the steep track.
are coming	:	The driver and the mule are coming up the gangway road.
are coming	:	They are coming toward this chamber.
caught	:	The runaway car caught the driver and the mule.
is caught	:	The mule is caught between the cars.
is thrown	:	The driver is thrown to the ground.
are injured	:	Both are badly injured.

Where is this chamber? Where is this car? Is the car loaded? Is the road steep? Is the car blocked in the right way? What happens when the block comes out? What is coming up the gangway road? Can the driver and the mule get out of the way? What happens to the driver and mule?

DON'T FAIL TO BLOCK YOUR CARS PROPERLY.



Car Properly Blocked

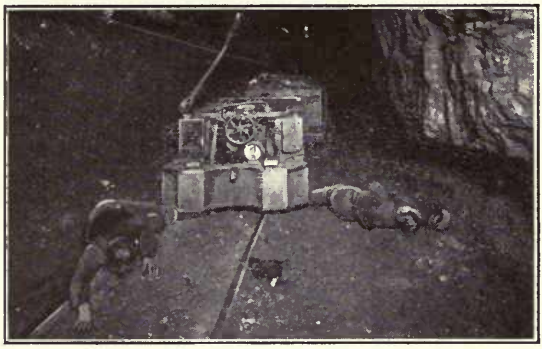
CAR PROPERLY BLOCKED ON PITCH

is on	:	This chamber is on the pitch.
is in	:	The car is in the face.
is loaded	:	It is loaded with coal.
		The car is blocked in the right way.
		There is a block in front of each wheel.
		There is a sprag in each wheel.
		There is a clevis block on the rail.
		A strong tie is in front of the car.
is blocked	:	The car is safely blocked.
get away	:	It cannot get away to run down the grade.
		No one is in danger now.

Where is this chamber? Is this loaded car in the face? Is this car blocked in the right way? What is in front of each wheel? What is in each wheel? What is on the rail? What is in front of the car? Can this car get away? Is any one in danger now?

ALWAYS BLOCK YOUR CARS PROPERLY.

Motorman Goes Down Grade Without Examining Brakes and Sand



Motor Derailed at Foot of Grade

MOTOR STARTING DOWN GRADE WITHOUT SAND

There is a sand box on the motor.
is put : Sand is put on the track where it is steep.
do slip : When sand is on the track the wheels do not slip.
can stop : If there is plenty of sand the motorman can stop the motor.
Sometimes there is no sand in the box.
is taking : The motorman is taking out a trip of loaded cars.
comes : He comes to the top of a grade.
is steep : The track is very steep.
does stop : **The motorman does not stop the trip.**
get off : **The helper does not get off to examine the brakes.**
There is no sand in the box.
starts : The trip starts down the grade.
cannot stop : **The motorman cannot stop it.**
slip : **The wheels slip on the rails.**
goes fast : **The trip goes too fast.**
jumps : **The motor jumps from the track.**
are thrown : **The motorman and helper are thrown off.**
are killed : **They are both killed.**

MOTORMAN, BE SURE THE BRAKES AND SAND ARE ALL RIGHT.

Helper Examines Sand and Brakes at Top of Grade

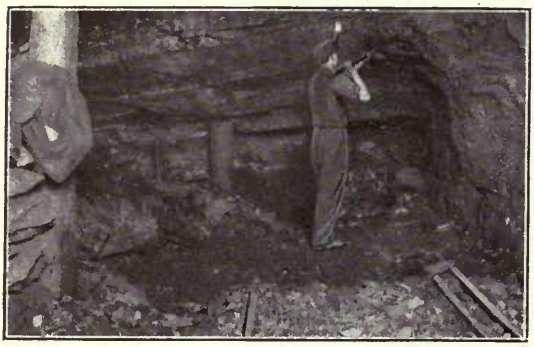
Motor Safe at Foot of Grade With Trip

EXAMINING BRAKES AND SAND AT TOP OF GRADE

comes	:	The trip comes to the top of the grade.
is steep	:	The track is very steep.
stops	:	The motorman stops the motor.
gets off	:	The helper gets off and examines the sand box and the brakes.
there is	:	There is sand in the box.
are	:	The brakes are in good order.
goes down	:	The trip goes down the grade.
can stop	:	The motorman can stop the motor now.
go down	:	They go slowly down the grade.
come	:	They come safely to the bottom.
pushes	:	The motorman pushes the cars back.
takes out	:	The helper takes out the sprags.
takes	:	The motorman takes the trip to the foot.

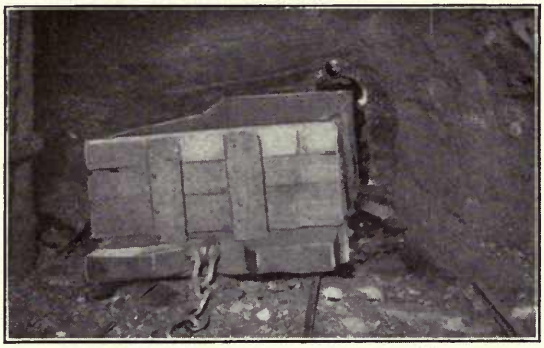
Is there a sand box on the motor? What is the sand used for? Do the wheels slip when sand is on the track? Is sand always in the box? Can the motorman stop the motor if there is plenty of sand? Does the motorman stop the motor at the top of the grade? What does the helper do? Is there sand in the box? Does the trip go slowly down the grade? Do they get down safely? Where do they take the trip?

BRAKEMAN, EXAMINE THE BRAKES AND SAND BEFORE STARTING DOWN A GRADE.



Miner Working in Dip Without Clevis Block on Rail

Runner Running Car Into Chamber



Car Off End of Track Catches Miner Against Face

CHAMBER ON THE DIP WITHOUT CLEVIS BLOCK ON THE RAIL

is in	:	This chamber is in the dip.
working out	:	The miner is working out the face.
		There is no clevis block on the rail.
to leave	:	It is very dangerous to leave this block off.
runs	:	The runner runs a car into the chamber.
sprags	:	The runner sprags the car.
to stop	:	There is no block on the rail to stop the car.
runs over	:	The car runs over the end of the track.
runs into	:	It runs into the face of the chamber.
is at work	:	The miner is at work.
is caught	:	The miner is caught between the top rock and the car.
cannot get away	:	He cannot get away.
is killed	:	He is killed.

Where is this chamber? What is the miner doing? Has the miner put the clevis block on the rail? Is it dangerous for the miner to leave the block off? Who comes with a car? Does the runner know the block is off the rail? Where does the car go? Can the miner get away? What happens to him?

DON'T LEAVE THE CLEVIS BLOCK OFF THE RAIL.

Miner Working in Dip With Block Properly on Rail

CLEVIS BLOCK ON THE RAIL

is in	:	This chamber is in the dip.
has put	:	The miner has put the clevis block on the rail.
is safe	:	The chamber is now safe.
working out	:	The miner is working out the face.
brings	:	The runner brings a car into the face.
sprags	:	He sprags the car.
comes	:	The car comes against the clevis block and stops.
has plenty	:	The miner has plenty of room now.
catch	:	The car cannot catch the miner.
is safe	:	The miner is safe.
must keep	:	The miner must always keep the car blocked at the face.

Where is this chamber? What is the miner doing? Has the miner put the clevis block on the rail? Who comes with a car? What does the runner do to the car? What happens when the car hits the block? Can the car catch the miner? Is the miner safe? Should the miner keep the block on the rail?

ALWAYS KEEP THE CLEVIS BLOCK ON THE RAIL.

Miner and Laborer Letting Car Down From Face

Laborer Fallen Under Car

A MINER RUNNING A CAR

is on	:	This chamber is on the pitch.
is at	:	This car is at the face of the chamber.
has drilled	:	The miner has drilled a hole.
wants	:	He wants to fire a shot.
is near	:	The car is too near the face.
will damage	:	The shot will damage the car.
run down	:	The car must be run down from the face.
does wait	:	The miner does not wait for the runner to come.
try	:	The miner and laborer try to let the car down themselves.
is steep	:	The road is very steep.
is heavy	:	The car is too heavy for them.
cannot hold	:	They cannot hold it back.
slips	:	The laborer's foot slips.
falls	:	He falls under the car.
passes over	:	The car passes over his body.

Where is this chamber? What is the miner going to do? Can he leave the car at the face? Does he wait for the runner? What are the miner and laborer doing? What happens to the laborer?

MINER, DON'T RUN CARS.

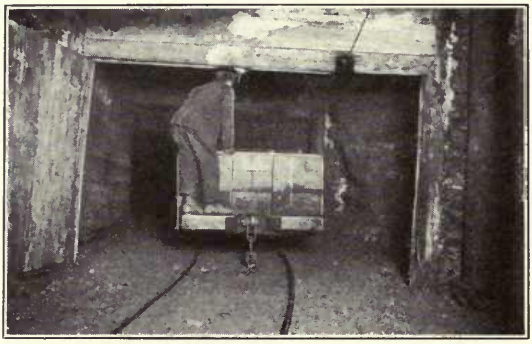
Miner Waited Until Runner Came

THE RUNNER RUNNING A CAR FOR THE MINER

is on	:	This chamber is on the pitch.
is ready	:	The miner is ready to fire a shot.
is near	:	This car is too near the face.
do let	:	The miner and laborer do not let the car down themselves.
to move	:	It is not safe for the miner to move the car.
is steep	:	The grade is very steep and the car is very heavy.
wait	:	They wait till the runner comes.
comes	:	The runner comes to the place.
waits	:	The runner waits beside the track ready to sprag the car.
takes	:	The laborer takes the blocks from before the wheels.
starts down	:	The car starts down the grade.
sprags	:	The runner sprags the car.
stops	:	The car soon stops.
are safe	:	The miner and laborer are both safe.
is away	:	The car is away from the face.
can fire	:	Now the miner can fire the shot.

Do the miner and laborer run this car? Who comes to run the car for them? What is the work of the runner?

MINER, ALWAYS LET THE RUNNER RUN THE CARS.



Driver Riding on Bumper With Back Turned Toward Front

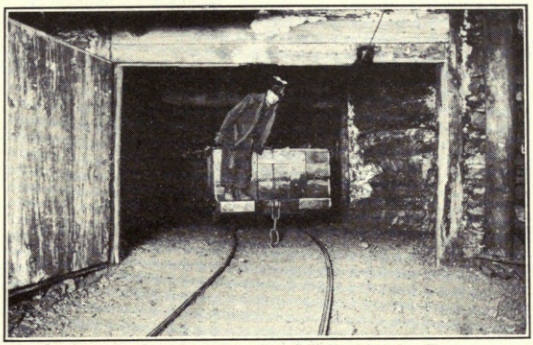
Driver, Knocked From Bumper, Fallen Under Car

HELPER RIDING BACKWARD ON A TRIP

Here is a door on the roadway.
is open : The door is open.
is coming : A trip of cars is coming along the road.
passes : The trip passes through the doorway.
is riding : The helper is riding on the front end of the trip.
is standing : He is standing on the bumper.
The helper's back is toward the door.
There is a sill over the door.
cannot see : The helper cannot see the sill.
strikes : The helper's head strikes the door sill.
is knocked : He is knocked from the bumper.
falls : He falls before the trip.
passes : The trip passes over his body.

Is there a door at this place? What is coming along the roadway? Where is the helper riding? Is the helper standing on the bumper? Is his face toward the door? What is above the door? Can the helper see the door sill? Does his head strike the sill? Is he knocked from the bumper? What happens to the helper?

HELPER, DON'T RIDE BACKWARDS ON THE TRIP.



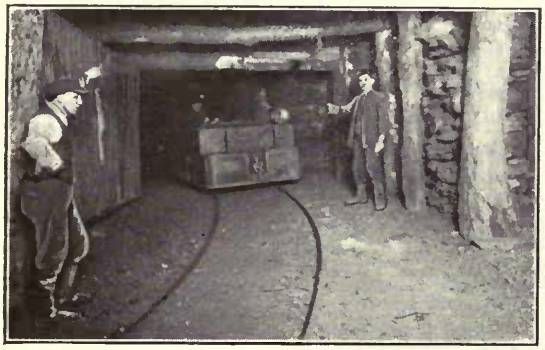
Driver Riding on Bumper With Face Turned Forward

HELPER RIDING FORWARD ON A TRIP

is coming : A trip of cars is coming along the road.
is over : A sill is over the door.
is on : The helper is on the front end of the trip.
is standing : He is standing on the bumper.
is toward : His face is toward the door now.
can see : He can see the door sill.
passes : The trip passes through the door.
stoops over: The driver stoops over.
does strike : His head does not strike the sill.
passes on : He passes on safely.
can protect : When the driver can see he can protect himself.

What do you see in this picture? Is the trip coming through the door? Is the driver riding on the front end of the trip? What is over the doorway? Can the driver see the sill now? Does the driver get through the door safely?

HELPER, ALWAYS RIDE WITH YOUR FACE TOWARD THE FRONT.



Motor Coming Through Doorway With Trip of Cars

Doorboy Jumping on Motor While in Motion

Doorboy Under Motor

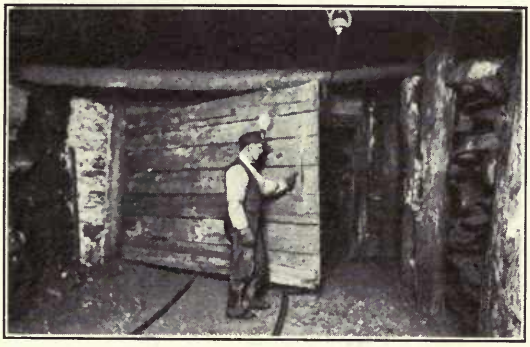
DOORBOY TRYING TO GET ON A MOTOR

is coming	:	The motor is coming along the roadway.
there is	:	There is a door on the gangway road.
stays	:	A doorboy stays by the door.
is closed	:	The door is closed.
sounds	:	The motorman sounds the alarm.
opens	:	The doorboy opens the door.
moves along	:	The motor moves along slowly.
jumps off	:	The helper jumps off to one side.
directs	:	The helper directs the doorboy to a safe place.
does not go	:	The boy does not go there.
gets on	:	The helper gets on the motor.
moves	:	The motor moves more rapidly.
tries	:	The doorboy tries to get on the moving motor.
falls	:	The boy falls under the motor.
runs over	:	The motor runs over the boy.
is killed	:	He is killed.

What is on the gangway road here? Who stays by the door? What does the boy do when a trip comes along? What is the helper doing here? Does the boy go to a safe place? What does the boy try to do? Does the boy get on the motor? What happens to him?

DOORBOY, NEVER TRY TO GET ON THE MOTOR.

Doorboy Standing in Place of Safety



Doorboy Closing Door After Trip

DOORBOY KEEPING IN A SAFE PLACE

sounded	:	The motorman sounded his alarm.
opened	:	The doorboy opened the door.
comes	:	The motor comes along the roadway.
jumps off	:	The helper jumps off the motor.
motions	:	He motions the doorboy to a safe place.
steps	:	The doorboy steps behind the pillar.
passes	:	The motor passes through the doorway.
gets on	:	The helper gets on the motor.
remains	:	The doorboy remains in the safe place till the motor
has gone	:	has gone.
closes	:	Now the doorboy closes the door.
must leave	:	He must not leave the door open.
is closed	:	If the door is not closed some of the miners
will get	:	will get no air.
is safe	:	The boy is safe now.
sits down	:	He sits down to wait until another trip comes along.

What does the doorboy do when the alarm sounds? Does the doorboy go to a safe place? After the motor passes by what must the boy do? If the door is not closed what will happen? Is the boy safe now? Should the doorboy ever try to get on a moving motor?

DOORBOY, ALWAYS KEEP IN A SAFE PLACE.

Miner Picking Out "Stump" After a Shot,
Without Testing Roof

Top-rock Fallen on Miner

MINER WORKING UNDER BAD TOP-ROCK

has fired : The miner has fired a shot in this chamber.
blown out : The coal has been blown out.
has returned : The miner has returned to the face from the cross-cut.
has examined : The miner has not examined the roof.
takes : The miner takes his pick and goes under the bad top-rock.
is picking : The miner is picking out a large "stump" of coal.
The top-rock is not good.
was loosened : It was loosened by the shot.
is picking : While the miner is picking out the coal the rock
falls on him.
falls :
crushes : The fall of rock crushes and kills the miner.
This was not a careful miner.

Has a shot been fired in this chamber? Where was the miner when the shot went off? Did the miner test the top-rock when he returned from the cross-cut? What did the miner do when he came back to the face? Was the top-rock safe? What happened while the miner was picking out the coal? Was this a careful miner?

DON'T FAIL TO EXAMINE THE TOP-ROCK AFTER EVERY SHOT.

Miner Working After Having Stood Props

Miner Preparing to Blast Down Bad Top

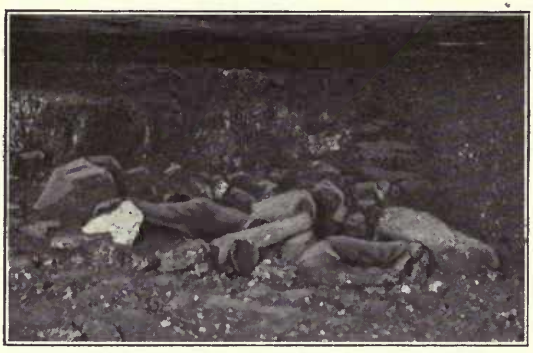
MINER MAKING THE CHAMBER SAFE

is shown	:	A careful miner is shown here.
has been fired	:	A shot has been fired in this chamber.
has returned	:	The miner has returned from the cross-cut.
wants to pick	:	The miner wants to pick the "stump" of coal.
examines	:	He examines the top-rock before he goes under it.
finds	:	He finds the top-rock is not safe.
makes	:	Before he goes under the rock he makes it safe.
can make	:	The miner can make this rock safe in two ways.
can stand	:	The miner and laborer can stand a heavy prop under this rock.
holds up	:	The prop holds up the rock.
picks out	:	The miner now picks out the coal in safety.
can drill	:	The miner and laborer can drill a hole in this top-rock.
can shoot	:	Then the miner can shoot down the bad rock.
is shot	:	After the rock is shot down the miner goes into the face in safety.

What has happened in this chamber? What does the miner want to do? Is the top-rock good? In how many ways can the miner make the place safe? What other way can the miner make the chamber safe? Is this miner very careful?

ALWAYS BE SURE TO MAKE THE TOP-ROCK SAFE.

Lighting Squib to Fire a Shot



Delayed Shot Goes Off Just as Miner Returns to Face

MINER RETURNING TO FACE AFTER A "MISS SHOT"

has drilled	:	The miner has drilled a hole in the face.
has put	:	He has put in the powder and tamped the hole.
is lighting	:	Now he is lighting the squib with the touch paper.
lights	:	After the miner lights the squib he runs back to the cross-cut.
waits	:	He waits for the shot to go off.
does hear	:	He does not hear the shot go off.
waits	:	The miner waits at the cross-cut about fifteen minutes.
does go off	:	The shot does not go off.
returns	:	The miner returns to the face.
to examine	:	The miner goes to examine the hole.
goes off	:	The shot goes off in the miner's face.
is killed	:	He is instantly killed by the flying coal.

Has the miner tamped this hole? What is the miner doing in the first picture? After he lights the squib what will the miner do? Does the shot go off at once? How long does the miner wait at the cross-cut? What happens when the miner goes to examine the hole? Is the miner killed?

DON'T GO BACK TO THE FACE AFTER A "MISS SHOT."

Miner Putting Up Notice After a "Miss Shot

Miner Reporting a Miss-fire Before Going Home for the Day

MINER GOING HOME AFTER A "MISS SHOT"

has lighted	:	The miner has lighted the squib.
went back	:	He went back to the cross-cut.
waited	:	He waited about fifteen minutes at the cross-cut.
go off	:	The shot did not go off.
does return	:	The miner does not return to the face.
gets	:	The miner gets his coat and dinner pail and goes home.
tells	:	The miner tells the men in the next chambers that there is a miss-fire.
puts	:	At the entrance to the chamber he puts a board across the road. This board is three feet from the ground.
writes	:	The miner writes on the board with chalk, "Keep out—Danger—Miss-shot."
goes	:	The miner then goes to the foreman's office.
reports	:	He reports to the foreman or fire-boss.
goes home	:	The miner goes home.
works	:	He works no more that day.
goes off	:	If the shot goes off now it can hurt no one.

What did the miner do after he lighted the squib? Did the shot go off? How long did he wait at the cross-cut? What did he do after he waited about fifteen minutes? What did he put across the road at the entrance to the chamber? What did he write on the board? To whom did he report at the office? Did the miner go home? Did he work any more that day?

ALWAYS GO HOME AFTER A MISS-SHOT.

Miner Shortening Squib

Miner Lighting Shortened Squib

Miner Shot in Back

SHORTENING A SQUIB

has drilled	:	The miner has drilled a hole in the face.
has prepared	:	He has prepared the cartridge.
takes	:	Now he takes a squib out of the box.
sits down	:	**He sits down and shortens the squib.**
shortens	:	He shortens the squib because he wants to save time.
go off	:	The shot will go off quicker with a short squib.
tamps	:	The miner puts the squib in a dry place while he tamps the hole.
puts	:	**He puts the shortened squib in the hole.**
lights	:	He lights the squib with the touch paper.
starts	:	He starts to run to the cross-cut.
does not get	:	He does not get to the cross-cut.
burns	:	**The squib burns too quickly.**
goes off	:	**The shot goes off.**
hits	:	**The flying coal hits the miner in the back.**
is killed	:	**The miner is killed by the flying coal.**

Is this hole ready to tamp? What is the miner doing to the squib? Does he put the shortened squib into the hole? After he lights the squib what does he do? Does the miner get to the cross-cut? What happens to the miner?

DON'T SHORTEN YOUR SQUIB.

Miner Flagging Squib

FLAGGING A SQUIB

is ready	:	This miner is ready to tamp a hole.
has made	:	He has made the cartridge ready.
takes	:	He takes a squib out of the box.
sits down	:	He sits down on the bench.
unrolls	:	He unrolls the end of the squib.
examines	:	The miner examines the squib to see if any powder is in the end of it.
does shorten	:	The miner does not shorten the squib.
puts	:	The miner puts the squib into the hole.
lights	:	He lights the squib with the touch paper.
runs back	:	He runs back to the cross-cut.
burns	:	The squib burns slowly now.
has time	:	The miner has plenty of time.
waits	:	After the miner gets to the cross-cut he waits a few minutes.
goes off	:	The shot goes off.
returns	:	The miner returns to the face.
is safe	:	The miner is safe.

Did this miner shorten his squib? What did this miner do to the squib? Was he sure the squib would burn a few minutes? Did the miner have plenty of time to reach the cross-cut? Was the miner safe?

ALWAYS FLAG YOUR SQUIB BUT NEVER SHORTEN IT.

Miner Preparing Two Holes

Miner Lighting Two Holes

Miner Returning to Face in Time to be Caught by Second Shot

FIRING TWO HOLES

have drilled	:	The miner and laborer have drilled two holes.
has been tamped	:	The hole behind the miner has been tamped.
are tamping	:	The miner and laborer are tamping the other hole.
is tamped	:	When this hole is tamped both needles are drawn out.
has lighted	:	The miner has lighted one squib.
is lighting	:	Now he is lighting the second squib.
go back	:	The miner and laborer go back to the cross-cut.
hear	:	They soon hear a shot go off.
thinks	:	The miner thinks both shots went off at the same time.
goes into	:	The miner goes into the face.
gets	:	When the miner gets to the face the second shot goes off.
is killed	:	The miner is killed by the flying coal.

What have the miner and laborer done? Where is the second hole? Does the miner light both squibs at the same time? What does the miner hear from the cross-cut? Have both shots gone off? What happens when the miner goes back to the face?

NEVER FIRE MORE THAN ONE SHOT AT A TIME.

Miner Firing One Hole

Miner Drilling Second Hole After Firing First One

FIRING ONE HOLE AT A TIME

Here is a careful miner.
is working : He is working in the face.
wants : He wants to fire two shots.
drills : He drills one hole into the face on one side of the chamber.
is put : The cartridge is then put into this hole.
tamp : The miner and the laborer tamp this hole.
lights : The miner lights the squib and goes back to the cross-cut.
goes off : The shot goes off.
returns : The miner returns to the face and drills another hole in the other side
drills : of the chamber.
tamps : He then tamps and fires this hole.
drilled : Now both holes have been drilled and fired.
blown out : The coal is blown out on both sides of the chamber now.
are safe : The miner and laborer are both safe.
was danger : There was no danger from firing here.

What kind of a miner is this? Did he fire two shots at one time? Why did he fire the shots at different times? Is it safer to drill a hole and then fire it, or to drill two holes and fire them at the same time? After the first shot what did the miner do? Did any accident happen to the miner and laborer here?

ALWAYS FIRE ONE SHOT AT A TIME.

Forcing Cartridge Into Hole With Drill

Cartridge Exploded and Miner Injured

FORCING CARTRIDGE INTO A SMALL HOLE

is small	:	The miner's drill is too small at the sharp end.
will make	:	This drill will not make a hole large enough for the cartridge.
drilled	:	The miner drilled a hole with this drill.
tries	:	The miner tries to put a cartridge into the hole.
does go	:	The cartridge does not go into the hole easily.
cannot push	:	The miner cannot push the cartridge into the hole with his hands.
gets	:	He gets the drill.
tries	:	He tries to force the cartridge into the hole with the drill.
strikes	:	The drill strikes a spark.
flies	:	The spark flies into the powder.
sets off	:	This spark sets off the powder.
is near	:	The miner is very near the hole.
goes off	:	The powder goes off in the miner's face.
thrown back	:	The miner is thrown back against the gob.
are burned	:	His hands and face are badly burned.

What is the matter with this miner's drill? Does the drill make a hole large enough for the cartridge? How does the miner try to force the cartridge? Does the drill strike a spark? What does the spark do to the powder? Is it safe to force the powder with a drill?

DON'T FORCE THE CARTRIDGE INTO THE HOLE.

Fire-boss Gauging Drill

Fire-boss Ordering Miner Out to Have Drill Sharpened

Miner Putting Cartridge Into Proper Sized Hole

HAVING DRILL MADE "UP TO GAUGE"

is small	:	This miner's drill is too small at the sharp end.
finds	:	The fire-boss finds him using the drill.
takes	:	The fire-boss takes a gauge from his pocket.
measures	:	He measures the drill with the gauge.
is not	:	The end of the drill is not large enough.
can make	:	The miner cannot make a hole large enough for the cartridge with this drill.
sends	:	The fire-boss sends the miner out to the blacksmith with the drill.
makes	:	The blacksmith makes the drill the right size.
drills	:	The miner drills a hole with the drill now.
is	:	This hole is large enough.
pushes	:	The miner pushes the cartridge into the hole easily now with the needle.
is safe	:	The cartridge is in the hole and the miner is safe.

What is the fire-boss doing? What is wrong with the drill? Where does the fire-boss send the miner with the drill? What does the blacksmith do with the drill? Can the miner make a large enough hole now? How does the miner put the cartridge into the hole now? Is he safe now?

ALWAYS BE SURE YOUR DRILL IS THE RIGHT SIZE.

Miner Firing Shot

Miner Coming Through Cross Cut Caught by Blast

FAILURE TO GIVE WARNING WHEN READY TO FIRE

This is not a safe miner.

has drilled	:	He has drilled a hole in the bottom coal.
have tamped	:	He and the laborer have tamped the hole.
is ready	:	The miner is ready to fire the shot.
does not send	:	He does not send the laborer into the next chamber to tell them he is going to fire.
does know	:	The miner in the next chamber does not know this miner is going to fire.
is lighting	:	The miner is lighting the squib with touch paper.
runs back	:	This miner runs back to the cross-cut.
comes through	:	The miner from the next chamber comes through to the face.
goes off	:	The shot goes off.
is killed	:	The miner from the next chamber is killed by the flying coal.
returns	:	The miner of this chamber returns to the face from the cross-cut.
finds	:	He finds the other miner killed near the face.
should have told	:	This miner should have told the other miner he
was ready	:	was ready to fire.

What is the miner doing now? Has he sent the laborer to tell the miners in the next chambers? Does the miner in the next chamber know a shot is being fired? Does the other miner come through the cross-cut? What happens to him when the shot goes off?

DON'T FIRE UNTIL YOU NOTIFY THE MEN IN THE NEXT CHAMBERS.

Sending Laborer to Notify Men in Adjoining Chambers

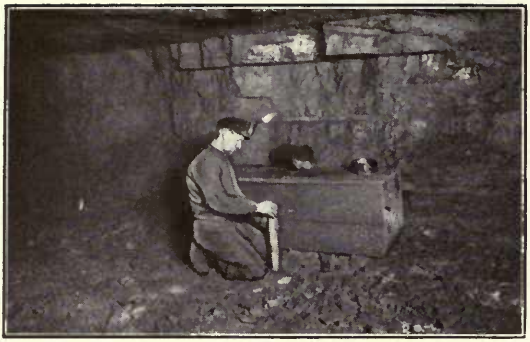
Laborer Warning Miner in Adjoining Chamber

GIVING WARNING WHEN READY TO FIRE

has tamped	:	This miner has tamped a hole.
is ready	:	He is now ready to light the squib.
tells	:	He first tells the laborer to go into the next chambers.
tells	:	The laborer tells the men in the next chamber that his miner is firing.
lights	:	The miner lights the squib and runs back to the cross-cut shouting, "Fire! Fire!"
know	:	The men in the next chambers know a shot is being fired here.
come through	:	They do not come through the cross-cut into this chamber.
goes off	:	The shot goes off.
is hurt	:	No one is hurt.
comes back	:	The miner comes back to the face.
must let	:	The miner must let the men in the next chambers know when he is ready to fire.

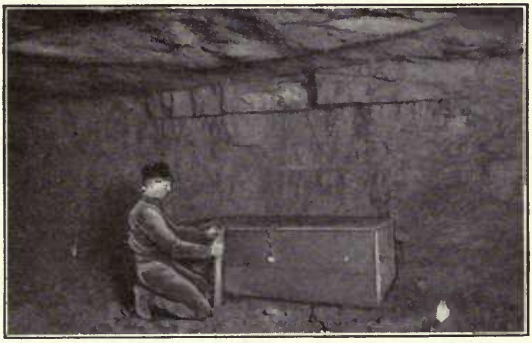
What is this miner ready to do? Where does he send the laborer? What does the laborer tell the men in the next chamber? Do the other miners come through the cross-cut now? Where does the miner go? Is anyone hurt when the shot goes off?

ALWAYS NOTIFY THE MEN IN THE NEXT CHAMBER BEFORE YOU FIRE.



Miner Preparing Cartridge With Lamp on Head

Powder Exploded



Preparing Cartridge With Lamp at a Safe Distance

PREPARING A CARTRIDGE
(Wrong Way and Right Way)

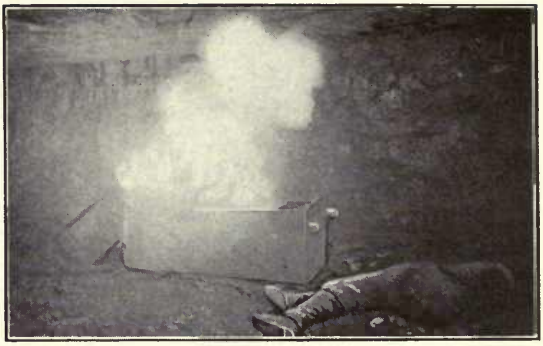
has come	:	The miner has come to the box to get his powder.
has	:	He has his lamp on his cap.
takes out	:	He takes the cartridge out of the can.
prepares	:	The miner prepares the cartridge with the lighted lamp above it.
drops	:	A spark drops from the light into the powder.
sets off	:	The spark sets off the powder.
goes off	:	The cartridge goes off in the miner's hands.
is killed	:	He is killed.

prepares	:	In the last picture the miner prepares the cartridge in the safe way.
came back	:	Here the miner came back to the box.
took	:	He took the lamp off his cap.
put away	:	He put the lamp five feet away.
prepares	:	Now the miner prepares the cartridge.
can fall	:	No sparks can fall into the powder now.
is safe	:	The miner is safe here.

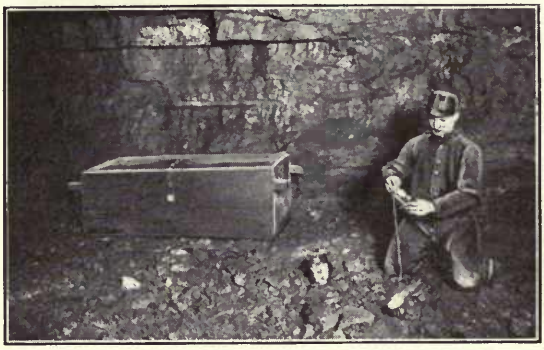
Where is the lamp in the first picture? Can a spark fall into the cartridge? What happens while the miner prepares the cartridge? In the last picture where is the lamp? How far must the lamp be from the powder? Is this miner safe?

ALWAYS KEEP THE LAMP FIVE FEET FROM THE POWDER.

Putting Cotton in Lamp, Using Old Cotton for Light



Powder in Box Exploding. Miner Injured



Miner Putting in New Cotton at a Safe Distance from Box

PUTTING IN A NEW COTTON.
(Wrong Way and Right Way)

keeps : The miner keeps his cotton and powder in the box.
comes : He comes to the box for a new cotton.
takes out : He takes the old cotton out of the lamp and lays it on the box.
is putting : He is now putting a new cotton into the lamp.
is burning : The old cotton is still burning.
falls : A spark falls from the old cotton into the box.
sets off : The spark sets off the powder in the box.
is blown : The box is blown to pieces and the miner is killed.

is putting : In the last picture the miner is putting in new cotton in the right way.
has : This miner has two lamps.
lights : He lights one lamp and puts it on the ground five feet from the box.
puts : Now he puts a new cotton in the other lamp.
can get : No sparks can get into the box now and the miner is safe.

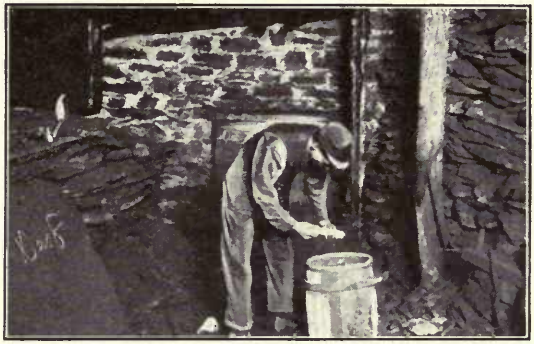
What is this miner doing? Where does the first miner put his old cotton? What is in the box? What happens?

How does the second miner make light for himself? Where does he set the lamp?

ALWAYS KEEP YOUR LIGHT AWAY FROM THE BOX.

Thawing Dynamite with Lamp

Dynamite Exploded



Thawing Dynamite with Manure

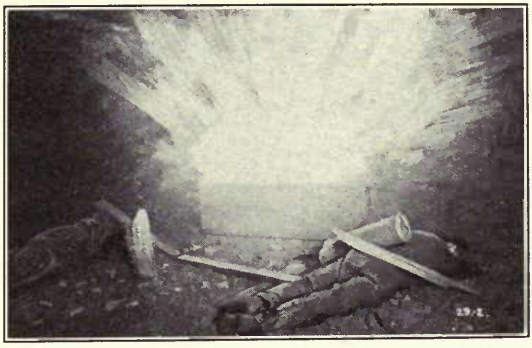
THAWING FROZEN DYNAMITE
(Wrong Way and Right Way)

is ready	:	The miner is ready to blast some rock.
has gone	:	He has gone for his dynamite.
is frozen	:	The dynamite is frozen.
cannot use	:	The miner cannot use frozen dynamite.
must thaw	:	He must thaw the dynamite first.
holds	:	He holds his lamp under the stick of dynamite to thaw it.
makes	:	The light makes the dynamite too hot.
explodes	:	The dynamite explodes and kills the miner.
shows	:	The third picture shows a careful miner.
brought	:	He brought a keg of manure from the barn.
puts	:	He puts his dynamite in the manure.
thaws	:	The heat from the manure thaws the dynamite.
does become	:	The dynamite does not become too hot.
is safe	:	The miner is safe now.
does explode	:	The dynamite does not explode.

Is it right to thaw dynamite with a lamp? What happens when he thaws the dynamite with a lamp? How does the last miner thaw dynamite? Is there heat in the manure? Can the dynamite explode in the manure?

DON'T THAW DYNAMITE WITH A LAMP.

Miner and Laborer Sitting on Box Smoking



Powder in Box Exploded. Men Are Killed

SMOKING ON THE BOX

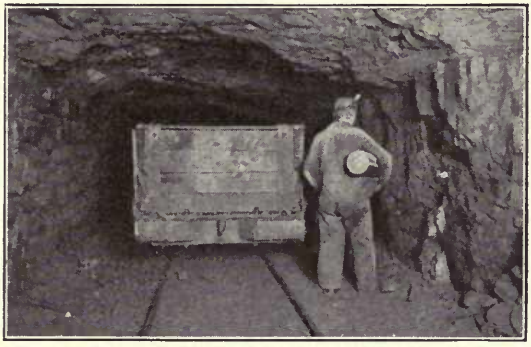
have come	:	The miner and laborer have come back to the box.
sit	:	They sit on the box.
get	:	They get their pipes to have a smoke.
smoke	:	They smoke and talk for some time.
are ready	:	They are ready to go back to work.
knocks	:	The miner knocks the ashes out of his pipe on top of the box.
is fire	:	There is still some fire in the ashes.
falls from	:	A spark falls from the ashes into the box.
gets into	:	The spark gets into the powder.
is blown	:	The box is blown to pieces and the men are both killed.
was safe	:	It was not safe for the men to smoke on the box.

What are these men doing? Where are they sitting? What is in the box? When they are done smoking what does the miner do? Is there some fire still in the ashes? What falls into the box? Does this spark set the powder off? What happens to these men? Were these men careful?

NEVER HAVE FIRE NEAR YOUR POWDER BOX.

Crossing Trip of Cars with Keg of Powder on Shoulder

Miner Thrown Between Cars as Result of Shock



Miner Walking Around End of Trip. Powder Keg Under His Arm

CROSSING OVER A TRIP OF CARS

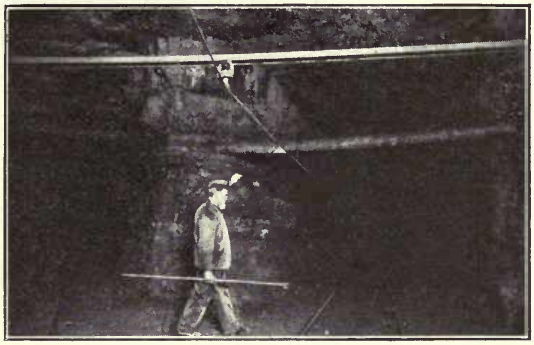
is taking :	This miner is taking a can of powder into his chamber.
is carrying :	He is carrying the powder on his shoulder.
	There is a trolley wire over the road.
is standing :	A trip of cars is standing on the road.
must get :	The miner must get on the other side of the cars.
crosses over :	He crosses over the trip with the can on his shoulder.
touches :	The can touches the wire.
is knocked :	The miner is knocked down between the cars.
is hurt :	He is badly hurt.
	In the third picture is another miner.
is carrying :	This miner is carrying a can of powder.
	There is a trip of cars in his way.
carries :	This miner carries the powder under his arm.
does cross :	He does not cross over the trip.
walks :	He walks around the end of the trip.
comes back :	He comes back on the other side.
	He is a careful miner.

How did the first man carry his keg of powder? Did he cross over the trip? What happened to him? How did the second man carry his keg? Did he walk around the trip or cross over? Which was the better way?

IT IS NEVER SAFE TO CROSS OVER A TRIP OF CARS.

Miner with Drill on Shoulder Walking Under Trolley Wire

Drill Struck Wire. Miner Thrown to Ground



Carrying Drill in Hand by Side

MINER CARRYING A DRILL ON HIS SHOULDER

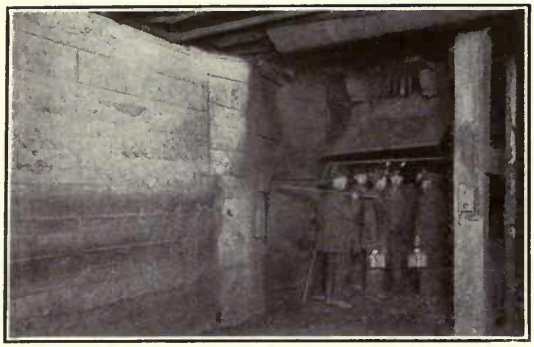
is walking	:	This miner is walking along the road.
there is	:	There is a trolley wire over the road.
is carrying	:	The miner is carrying a drill on his shoulder.
walks under	:	The miner walks under the trolley wire with his drill.
strikes	:	His drill strikes the trolley wire.
passes	:	The electricity passes through the drill to the man.
is shocked	:	The man is shocked.
is knocked	:	He is knocked to the ground.
hurts	:	The shock hurts the man.

is walking	:	In picture three the miner is walking under the trolley wire.
is carrying	:	He is carrying his drill in his hand by his side.
can touch	:	The drill cannot touch the wire now.
passes under	:	The miner passes under the wire safely.
does receive	:	He does not receive a shock.

How is the miner carrying the drill in the first picture? What happens in the first picture? What happens when the drill strikes the wire?

How does the miner carry the drill in the third picture? Is this man hurt? Which is the best way to carry the drill?

DON'T CARRY A DRILL ON YOUR SHOULDER.



Going on Cage with Drill on Shoulder and Guard Rail Up

Drill Catches in Roof as Cage is Hoisted

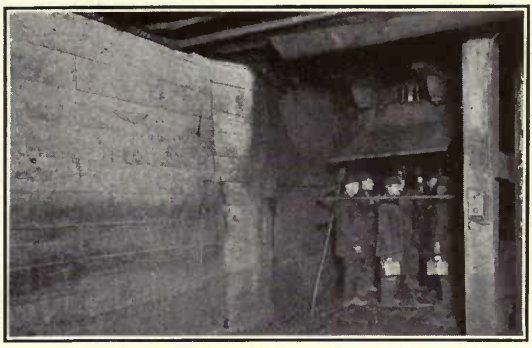
Miner Thrown Off Cage to Foot of Shaft

MINER ON CAGE WITH DRILL ON HIS SHOULDER

is at	:	The cage is at the foot.
are going	:	These men are going home.
get on	:	The men get on the cage.
has	:	One man has a drill on his shoulder.
gets	:	When he gets on the cage he does not take the drill off his shoulder.
is given	:	The signal is given the engineer.
gives	:	The engineer gives the return signal.
is down	:	The guard rail is not down.
begins	:	The cage begins to go up.
catches	:	The end of the drill catches under the roof.
does stop	:	The cage does not stop.
held fast	:	The drill is held fast.
is pulled	:	The miner is pulled from the cage.
falls back	:	The miner falls back to the foot of the shaft.
is hurt	:	He is badly hurt from the fall.

What do we see at the foot of the shaft? Where are these men going? What is on one miner's shoulder? Does he take the drill off his shoulder when he gets on the cage? Is the guard rail let down? What happens after the cage starts to go up? Is the miner pulled off the cage? Is he hurt?

FOOTMAN, DON'T GIVE THE SIGNAL UNTIL EVERYTHING IS ALL RIGHT.



On Cage with Drill on End and Guard Rail Down

Men Land Safely at Top of Shaft

MINERS ON CAGE PROPERLY

is at	:	The cage is at the foot of the shaft.
have finished	:	The men have finished the day's work and are going home.
have gone	:	They have gone on the cage.
takes off	:	The man with the drill takes it off his shoulder.
stands	:	He stands the drill on end by his side.
is down	:	The guard rail is put down.
stands	:	The drill stands inside the guard rail.
are given	:	The signal and the return signal are given.
begins to go	:	The cage begins to go up.
cannot catch	:	Now the drill cannot catch in the roof.
can fall	:	No one can fall off now because the guard rail is down.
are safe	:	The men are safe now.
comes to	:	The cage comes to the landing.
step off	:	The men step off the cage.
go home	:	They go safely home.

Where are these men going? Where are they now? Has the man taken the drill off his shoulder? Where does he stand the drill? Is the guard rail put down? Can the drill catch in the roof now? Do the men come safely to the landing?

FOOTMAN, ALWAYS MAKE EVERYTHING SAFE BEFORE YOU GIVE THE SIGNAL.

Taking Up Track in Old Workings

Sitting Down to Eat Dinner in Old Workings Without Examining Roof

Injured by Fall of Rock

CARELESS WORKMAN IN OLD WORKINGS

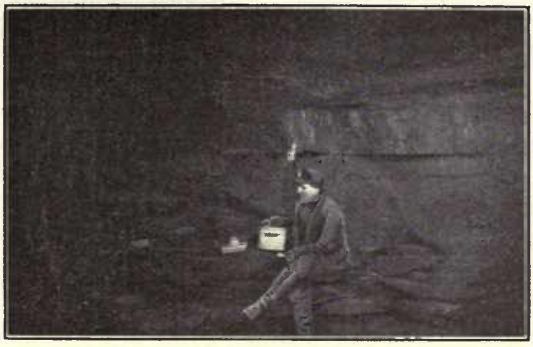
are	:	Here are old workings.
has been worked	:	The coal has all been worked out.
there is	:	There is one of the track-layers.
is taking up	:	He is taking up an old track.
has been working	:	He has been working a long time and is hungry.
gets	:	He gets his dinner pail and sits down to eat.
does not examine	:	He does not examine the roof.
has been tested	:	The timbers are old and the roof has not been tested for a long time.
is not good	:	The roof is not good.
falls down	:	A rock falls down and hits the man.
is killed	:	The track-layer is killed.

Where is this man working? Has all the coal been taken out? What is this man doing? What do you call the man who lays track? Is the track-layer hungry? Does he examine the roof before he sits down to eat? Is the roof bad here? What happens while the man is eating?

DON'T FAIL TO BE CAREFUL WHEN IN OLD WORKINGS.

Taking Up Track in Old Workings

Examining Roof in Old Workings



Eating His Dinner in Safety

CAREFUL WORKMAN IN OLD WORKINGS

here is	:	Here is another track-layer.
has been working	:	He has been working in some old workings.
wishes	:	He wishes to eat his dinner.
thinks	:	He thinks the roof may not be safe.
examines	:	He examines the roof carefully before he sits down.
finds	:	He finds this place is safe.
there is	:	There is no loose rock.
sits down	:	He sits down and is safe.
this is	:	This is a careful workman.

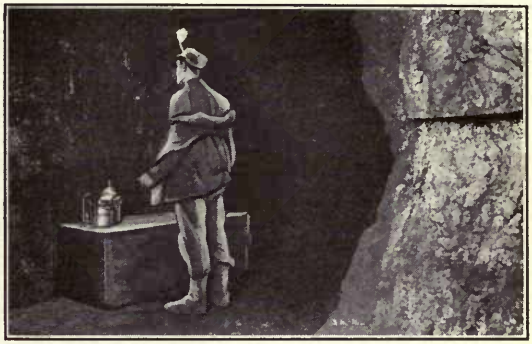
Who do we see in this picture? Is he working in old workings? What does he do before he sits down to eat? Is the roof good? Can he sit down now in safety? Is this a careful workman?

ALWAYS BE CAREFUL WHEN IN OLD WORKINGS.

Miner Getting Lamp at Lamp-House

Descending Into Mine

Miner at Fire-boss' Shanty



Miner Taking Off Coat at a Box

NAKED LAMP IN A GASSY CHAMBER

is going	:	This miner is going to work.
works	:	He works where there is gas.
must use	:	He must use a safety lamp when he is at work.
has come	:	Here he has come to the lamp room.
gives	:	The lamp man gives him a Davy safety lamp.
gets on	:	The miner then gets on the cage.
let down	:	He is being let down into the mine.
comes	:	At the foot of the shaft he comes to the fire-boss' shanty.
has	:	The miner has a lighted lamp on his cap and the safety lamp on his arm.
is in	:	The fire-boss is in the doorway.
tells	:	The fire-boss tells the miner that there is gas in his chamber and he must not go in with the naked light.
walks along	:	The miner walks along the gangway until he comes to the branch.
goes along	:	He goes along the roadway to his box.
takes off	:	He takes off his coat and leaves it at the box.
is on	:	The naked light is still on the miner's cap.
is ready	:	The miner is now ready for work.

Is there gas in this miner's chamber? What kind of a lamp must he use where there is gas? Where does he get his safety lamp? What does the fire-boss tell him? Does he leave the naked lamp at the box?

DON'T FAIL TO LEAVE YOUR OPEN LAMP AT THE BOX.

Miner Going from Box to Face with Safety and Naked Lamps

Miner at Face with Naked Lamp on His Head

Explosion of Gas at Face

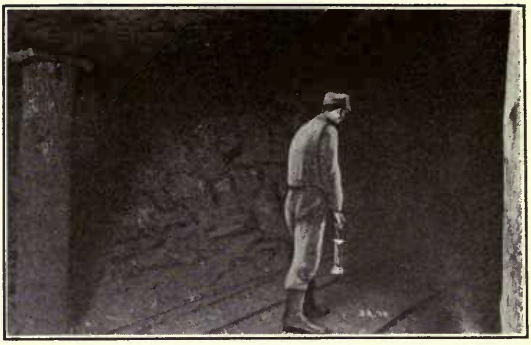
Injured Miner Receiving First Aid Treatment

NAKED LAMP IN A GASSY CHAMBER—(Continued)

goes	:	The miner goes from the box to the face.
carries	:	He carries the safety lamp in his hand and the naked light is still on his cap.
begins	:	Gas always begins to collect near the roof.
hold	:	It is dangerous to hold an open light near the roof.
is useless	:	The safety lamp is useless if you keep a naked light burning near the roof.
arrives	:	The miner arrives at the face.
burning	:	The naked light is still burning near the roof.
does test	:	The miner does not test for gas with the safety lamp.
burns	:	The safety lamp burns with a long blue flame when in gas.
there is	:	There is gas near the roof in this chamber.
sets off	:	The open light sets off the gas.
there is	:	There is an explosion.
is burned	:	The miner is badly burned.
		The "first aid" men carry the miner to the shanty.
put	:	They put oil and bandages on his burns.
is taken	:	He is then taken to the hospital.

DON'T CARRY AN OPEN LIGHT WHERE THERE IS GAS.

Miner Leaving Coat, Dinner Pail, and Naked Lamp at Box



Miner Going from Box to Face Without Naked Lamp

Miner Testing for Gas at Face with Safety Lamp

SAFETY LAMP IN A GASSY CHAMBER

works	:	This miner works in a "gassy" chamber.
told	:	The fire-boss told him to use a safety lamp.
leaves	:	The miner leaves his coat, dinner pail, and naked lamp at the box.
walks along	:	He walks along the roadway to the face carrying a safety lamp in his hand.
comes	:	He comes to the face.
tests	:	He tests for gas with his safety lamp.
finds	:	He finds there is some gas near the roof.
burns	:	The safety lamp burns with a long blue flame.
knows	:	This miner knows there is gas in the chamber.
works	:	He works by the light of the safety lamp.
does set off	:	He does not set off the gas.
is safe	:	He is safe.
this is	:	This is a very careful miner.

What kind of a chamber is this? What kind of a lamp must the miner use where there is gas? Where does he leave the naked lamp? Does he test for gas when he goes to the face? What kind of flame has a safety lamp when in gas? Is this a careful miner?

ALWAYS USE A SAFETY LAMP WHERE THERE IS GAS.

HOW TO BECOME AN AMERICAN CITIZEN

want	:	Do you want to be a citizen of the United States?
can do	:	There are some things which no one but a citizen can do.
cannot vote	:	A man cannot vote unless he is a citizen.
are passed	:	Many good laws are passed for citizens only.
intend	:	Do you intend to live in this country always?
be naturalized	:	If you do, you should be naturalized.
will be	:	Your wife and young children will then be citizens also.
it is	:	It is not hard to get citizenship papers.
costs	:	It costs five dollars and you must be in the country five years.
do not need	:	You do not need to have a lawyer.
must go	:	You must go either to the Court House or to the United States District Court in the Post Office at Scranton, Pa.
will find	:	There you will find a clerk to help you.

Can you vote if you are not a citizen? Do citizens have some privileges which others do not? Should you be naturalized if you remain in this country? Do you need to have a lawyer help you? Where must you go to get your citizenship papers?

Facts for Declaration of Intention

Department of Commerce and Labor
Naturalization Service
Washington, D. C.

Name: ..... Age: .....years

Occupation: .....

Color: .....Complexion: .....

Height: .....feet.....inches. Weight: .....pounds.

Color of hair: .....Color of eyes: .....

Other visible distinctive marks: ....

Where born: ....., ...
(city or town) (country)

Date of birth: ....., ..., ...
(month) (day) (year)

Present residence: ....., ..., ...
(No. street) (city) (State)

Emigrated from: ....., ...
(port of embarkation) (country)

Name of vessel: ....

Last place of foreign residence: ....., ...
(city) (country)

I am now a subject of and intend to renounce my allegiance to: .....

Date of arrival in the United States: ....., ..., ...
(month) (day) (year)

Port of arrival: ....., ...
(city) (state)

I am now a citizen of and intend to renounce allegiance to the Republic of: .....

....

SCRANTON POSTOFFICE

GETTING FIRST CITIZENSHIP PAPERS

can get	:	Any foreigner 18 years old can get his first citizenship papers.
lands	:	He can get his first papers any time after he lands in America.
must tell	:	He must tell the clerk his name and age.
is doing	:	He must tell what work he is doing and where and when he was born.
lived	:	He must tell where he lived before he came to this country.
know	:	He must know the date when he came and the name of the boat.
does know	:	If he does not know the name of the boat the clerk will find that out for him.
take oath	:	He must take oath that he intends to become a citizen.
must promise	:	He must promise to be loyal to his new country.
must give	:	He must give the clerk one dollar.
gives	:	The clerk now gives him his first paper.
should be	:	This first paper should be kept very carefully.

How old must you be to get your first papers? What must you tell the clerk before you get your paper? Must you know the date you came to America? How much must you pay to the clerk for this paper?

Petition For Naturalization

Department of Commerce and Labor
Naturalization Service, Washington, D. C.

First. My full name is .....

Second. My place of residence is .....

Third. My occupation is .....

Fourth. I was born on the.....day of....., 18...., at.....
(city)

Fifth. I emigrated to the United States from .....
(port)
on or about the .....day of....., 1...., and arrived at the port of .....in the United States, on the vessel.....

Sixth. I declared my intention to become a citizen of the United States on the .....day of....., 1....., at.....
in the .....Court .....
(city)

Seventh. I am ..... My wife's name is .....
(single or married)
She was born in....., and now resides at.....

Eighth. I have.....child .....
name..... born.....day of....., 1...., at.....
name..... born.....day of....., 1...., at.....

Ninth. I am.....able to speak the English language.

Tenth. I have resided continuously in the United States for five years, since the ..... day of....., 1....., and in the State of .....for one entire year prior to this time, since the .....day of....., 1.....

Witnesses:

Name.	Occupation.	Residence.
1).....	.....	.....
2).....	.....	.....

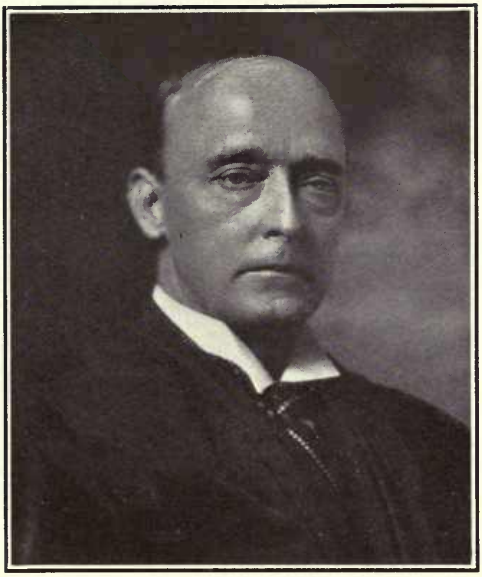
I herewith present my Declaration of Intention to become a Citizen of the United States.

INSIDE OF UNITED STATES COURT AT SCRANTON, PA.

GETTING SECOND CITIZENSHIP PAPERS

can get	:	Two years after this the man can get his second papers if he has been in the country five years.
must go	:	He must go to the clerk's office and take his first paper with him.
must take	:	He must take two citizens with him.
take oath	:	These men must take oath that he is a good man.
have known	:	The men must have known him five years in this country.
		They must know that he has been in this state one year.
must sign	:	The man must sign his name to a paper.
must show	:	This paper must show the name of his wife and when and where she was born.
		This paper must have on it the name of the city from which he sailed.
must give	:	The man must give four dollars to the clerk.

How many years must a man live in this country before he can get his second papers? Must he take his first papers with him? Must he take two witnesses? How long must the witnesses have known him? Must the man sign his own name? Are the names of his wife and children on the paper? How much must he pay for the second paper?



HON. CHARLES B. WITMER
Judge U. S. District Court, Scranton, Pa.

GETTING LAST CITIZENSHIP PAPERS

appear	:	The man must then appear in Court.
placed	:	His name will be placed on a list near the clerk's office.
can look	:	He can look at it and see when he must come to Court.
will be	:	It will be at least 90 days after signing the second paper.
will ask	:	The Judge will ask him many questions.
be able	:	He must be able to speak some English.
		Two witnesses must be in Court with him.
have known	:	These men must have known him for five years in this country.
must raise	:	He must raise his right hand and swear to obey the laws.
be given	:	Final papers will now be given him.
		He is then a citizen of the United States.
		If he has a wife, and children under 21 years of age, they are citizens also now.

Where does the clerk post the man's name? When will the man have to come to Court? How many witnesses must he bring to Court? How long must these witnesses have known him? Do his wife and children become citizens also?

Some Questions Asked by the Court

What Country were you born in?

Who is ruler of that Country?

How does that government differ from this?

Who is the President of the United States?

How is he elected?

If the President should die who would be President?

How did Roosevelt become President?

How did Taft become President?

How are the laws made for the Country?

Who are the Senators from Pennsylvania?

Who is the Congressman from this District?

What is the supreme law of the Country?

Who is Governor of Pennsylvania?

Who is Mayor of this City?

How many Councilmen are there?

What is the Capital of the United States?

What is the Capital of Pennsylvania?

How many States are there in the Union?

Name some of them.

How are United States Senators elected?

How are members of the House of Representatives elected?

Who is our State Senator from this District?

Where does the State Legislature meet?

THE
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